# PROGRESS

OF

# MEDICAL SCIENCE

## MEDICINE

UNDER THE CHARGE OF

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**A Graphic Method for Calculating Woodyatt Diabetic Diets.**—HANNON and MCCANN (*Bull. Johns Hopkins Hospital*, 1922, **33**, 119), after a brief discussion of Woodyatt's practical application of Shaffer's work on antiketogenesis, present a graphic chart which has been found of great service during the past year at the Johns Hopkins Hospital in facilitating the preparation of diabetic diet prescriptions. Starting with the patients' estimated caloric requirement, with the aid of their chart a maintenance diet may be rapidly worked out which will supply the desired percentage of protein and at the same time preserve a safe balance between the ketogenic and antiketogenic substances found in the diet. They also point out the fact that a diet containing less protein permits the use of much greater amounts of free carbohydrates.

**The Toxicity of Botulinus Toxin by Mouth.**—BRONFENBRENNER and SCHLESINGER (*Jour. Am. Med. Assn.*, 1922, **78**, 1519) state that botulism, a comparatively rare disease in this country, is apparently increasing in prevalence. The disease is caused by eating food contaminated with botulinus toxin. This toxin, elaborated by Bacillus botulinus, is quite analogous to the toxins of tetanus and diphtheria. They resemble one another in many respects, but differ quite markedly in others. The toxin of Bacillus botulinus is analogous to other toxins in all the essential properties, identifying it as a true bacterial toxin. It can be isolated from cultures by filtration. It kills experimental animals in small doses with symptoms characteristic of the disease. It is thermolabile and it is neutralized by a specific

type antitoxin. In the case of Bacillus botulinus one is dealing with a group of bacteria, the members of which are capable of producing the same symptoms, and which have similar cultural characteristics, but which are different in their immunological reactions. Experimentally botulinus toxin is many times more potent than either of the analogous toxins. The symptoms of botulism appear after a period of incubation, but this period is a matter of minutes as compared to hours in the case of tetanus and diphtheria. Neither tetanus nor diphtheria toxin is poisonous when taken by mouth, whereas botulinus toxin is toxic when taken by mouth in very small doses. The toxins of the first two bacteria are destroyed by the digestive processes which go on in the stomach and duodenum. The botulinus toxin, however, resists the acidity of the stomach for many hours, and, furthermore, trypsin and pepsin have no destructive effect upon it. In view of the experiments carried on by the authors one must conclude that the placing of crude filtrate in the stomach consists essentially in an acidification *in vivo* with a resulting increase in potency similar to that which can be accomplished by acidification in a test-tube. The failure of the digestive processes to alter the toxin enables direct absorption to occur through the digestive tract. Besides differing from other bacterial toxins in that it is toxic by mouth, botulinus toxin differs from them in its reaction with ethyl alcohol. Precipitation of tetanus and diphtheria toxin with alcohol produces a very refined substance, while the botulinus toxin by precipitating it with alcohol is destroyed. In several recent outbreaks of food poisoning some of those exposed escaped altogether or had very mild symptoms. The investigators of the outbreaks discovered that those who had escaped symptoms had partaken rather freely of alcoholic beverages during the meal.

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**Pituitary Extract Intranasally in Diabetes Insipidus.**—BLUMGART (*Arch. Int. Med.* 1922, **29**, 509) describes a method of administering pituitary extract by intranasal spray, thus avoiding the necessity for frequent hypodermic injections in cases requiring continued treatment. Extract of the posterior lobe of the pituitary sprayed intranasally in a case of diabetes insipidus was found to check the polyuria and polydipsia as effectually as did hypodermic injection. Administration by mouth or rectum proved quite ineffectual. Given by mouth in tablets coated with phenylsalicylate the extract was likewise without effect. Histamin failed to modify thirst or polyuria, no matter how given. The exact mechanism of absorption is undetermined. It is pointed out, however, that there is an almost direct communication between the lymphatics of the nasal mucosa and the subarachnoid space.

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**Hypophysectomy in Dogs and Cats.**—CAMUS and ROUSSY (*Compt. rend. Soc de biol.*, 1922, **86**, 1008) describe the technic of the buccal route and of the temporal route used by them in approaching the hypophysis. The operative mortality was high from meningitis, hemorrhage or brain injuries. Some of the animals died within several days, others within several weeks and still others lived for several months. Sixteen animals were sacrificed after a long time and ten or more were still living and apparently well. Total removal of the hypophysis was attempted at